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## **Class 427 COATING PROCESSES**

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- 1 BODY MEMBER PRINTING (E.G., FINGERPRINTING, ETC.)**
- 2.1 MEDICAL OR DENTAL PURPOSE PRODUCT; PARTS; SUBCOMBINATIONS; INTERMEDIATES (E.G., BALLOON CATHETER, SPLINT)**
- 2.11 . Analysis, diagnosis, measuring, or testing product (e.g., specimen preparation, microscope slide smearing)
- 2.12 .. For contacting living body or transfusing bodily fluid (e.g., endoscope, electrode, thermometer, probe)
- 2.13 .. Layer formed contains chemical reagent or chemically reacts with substrate (e.g., cell stain or fix, pH paper, immobilized antigen)
- 2.14 . Particulate or unit-dosage-article base (e.g., tablet, pill, pellet, capsule, liposome, powder, controlled-release implant, suppository; excluding transdermal patch)
- 2.15 .. Fluidized bed utilized
- 2.16 ... Retarded or controlled-release layer produced (e.g., enteric)
- 2.17 ... Significant color or other intended appearance altering layer formed (e.g., shining, indicia)
- 2.18 .. En masse rotating means employed (e.g., rotating pan, tumbling)
- 2.19 ... Retarded or controlled-release layer produced (e.g., enteric)
- 2.2 ... Significant color or other intended appearance altering layer formed (e.g., shining, indicia)
- 2.21 .. Retarded or controlled-release layer produced (e.g., enteric)
- 2.22 .. Gelatin matrix layer produced
- 2.23 .. Significant color or other intended appearance altering layer formed (e.g., shining, indicia)
- 2.24 . Implantable permanent prosthesis (i.e., artificial body member) (e.g., pacemaker, lens, cornea, glaucoma shunt, heart valve, muscle, spinal disc, breast, internal organ)
- 2.25 .. Liquid conveying (e.g., vascular, arterial, bile duct, urethra)
- 2.26 .. For mineralized body part (e.g., bone, tooth, crown, hip)
- 2.27 ... Inorganic oxygen-containing compound containing layer formed (e.g., hydroxyapatite, ceramic, glass)
- 2.28 . Device for creating or holding open an unnatural opening in a membrane or organ (e.g., syringe, scalpel, drainage tube)
- 2.29 . Dental product (e.g., floss, denture, orthodontia wire)
- 2.3 . Fluid barrier or fluid transporting product, other than merely absorbing (e.g., surgical glove, condom, lined diaper, membrane filter, IV tubing, cannula, dialysis membrane, urinary catheter)
- 2.31 . Flexible web, sheet, film, or filament base (e.g., fabric, bandage, suture, transdermal patch, orthopedic cast tape)
- 4 PLANT MEMBER OR ANIMAL SPECIMEN COATING**
- 5 RADIOACTIVE BASE OR COATING**
- 6 . Particles or nuclear reactor fuel elements coated
- 7 FRAUD OR TAMPER DETECTING**
- 8 MEASURING, TESTING, OR INDICATING**
- 9 . Thickness or uniformity of thickness determined
- 10 .. Electrical or optical
- 11 FRICTIONAL APPLICATION (I.E., RUBBING SOLID COATING MATERIAL ON BASE)**

**446****SPRAY COATING UTILIZING FLAME OR PLASMA HEAT (E.G., FLAME SPRAYING, ETC.)**447

. Organic containing coating

448

. Nonuniform or patterned coating

449

. Continuous feed solid coating material (e.g., wire, rod, or filament, etc.)

450

. Inorganic carbon containing coating, not as steel (e.g., carbide, etc.)

451

.. Additionally containing nickel, cobalt, or iron as free metal or alloy

452

. Silicon containing coating

453

. Metal oxide containing coating

454

.. Superposed diverse or multilayer similar coatings applied

455

. Metal or metal alloy coating

456

.. Aluminum, nickel, cobalt, or iron metal or alloy containing coating

**457****DIRECT APPLICATION OF ELECTRICAL, MAGNETIC, WAVE, OR PARTICULATE ENERGY**458

. Electrostatic charge, field, or force utilized

459

.. Fluidized bed utilized

460

... Ionization or corona discharge utilized

461

... Heating or fusing applied coating

462

.. Flock or fiber applied

463

... Pile- or nap-type surface formed

464

.... Heating, drying, or cooling adhesive surface

465

.... Organic substrate specified (e.g., fabric, etc.)

466

.. Nonuniform or patterned coating (e.g., ink jet printing, etc.)

467

... Edging or striping

468

... Mask or stencil utilized

469

... Coating material consists of charged particles (e.g., paint, pigment, dye, etc.)

470

.. Superposed diverse or multilayer similar coatings applied

471

.. Applying coatings to opposite sides of a substrate (excluding processes where all coating is by immersion)

472

.. Positioning, orientation, or application of nonsprayed, nonatomized coating material solely by electrostatic charge, field, or force

473

... Inorganic substrate

474

... Solid particles applied

475

.. Solid particles or atomized liquid applied

476

... Inside hollow articles

477

... Articles or substrates sequentially moved past atomizing source

478

.... Collection of off-target or fugitive coating material

479

.... Utilizing multiple spray sources (e.g., atomizers)

480

.... Movable atomizer or spray source (e.g., spray source or atomizer rotates, reciprocates, oscillates, etc.)

481

.... Rotatable base or support for substrate

482

... Running or indefinite length substrate

483

... Utilizing apparatus to atomize and electrostatically charge liquid coating material (e.g., charging electrode adjacent spray source, etc.)

484

.... Rotatable atomizer or spray source

485

... Coating contains organic material

486

.... Inorganic substrate

487

. Polymerization of coating utilizing direct application of electrical, magnetic, wave, or particulate energy (i.e., including cross-linking, curing, and hardening of organics)

488

.. Plasma initiated polymerization

489

... Organosilicon containing coating

490

... Fluorocarbon containing coating

491

... Organic substrate

492

.. Multiple applications of identical radiation energy source to polymerize (e.g., pulse, flash, lamp, etc.)

493

.. Application of plural diverse energy sources to polymerize (e.g., electromagnetic wave plus resistance heat, ultraviolet wave plus infrared wave, etc.)

494

.. Gloss control (e.g., light scattering, etc.)

- 495 .. Polymerization involving the control of oxygen containing gas as an inhibitor (e.g., air, etc.)
- 496 .. High energy electromagnetic radiation or high energy particles utilized (e.g., gamma rays, X-rays, atomic particles, i.e., alpha rays, beta rays, electrons, etc.)
- 497 ... Vapor deposition utilized
- 498 ... Immersion, partial immersion, spraying, or spin coating utilized (e.g., dipping, etc.)
- 499 .... Natural cellulose substrate
- 500 ... Coating material includes colorant or pigment
- 501 ... Textile, fiber, or wire coated or impregnated
- 502 ... Magnetic recording medium formed
- 503 ... Organosilicon containing coating material
- 504 ... Nonuniform or patterned coating (e.g., mask, printing, etc.)
- 505 ... Coating is adhesive or intended to be made adhesive (e.g., release sheet or coating, etc.)
- 506 ... Benzene ring or nitrogen containing coating material
- 507 .... Styrene or carboxamide group containing coating material (e.g., urea, urethane, etc.)
- 508 .. Low energy electromagnetic radiation utilized (e.g., UV, visible, IR, microwave, radio wave, actinic, laser, etc.)
- 509 ... Vapor deposition utilized
- 510 ... Nonuniform or patterned coating (e.g., mask, printing, textured, etc.)
- 511 .... Printing ink utilized
- 512 ... Immersion, partial immersion, spraying, or spin coating utilized (e.g., dipping, etc.)
- 513 ... Textile or fiber coated or impregnated
- 514 ... Coating material includes colorant or pigment
- 515 ... Organosilicon containing coating material
- 516 ... Coating is adhesive or is intended to be made adhesive (e.g., release sheet or coating, etc.)
- 517 ... Coating includes specified rate affecting material
- 518 .... Inorganic substrate
- 519 .... Keto or aldehyde containing group is part of the rate affecting coating material (e.g., benzoin, benzophenone, acetaldehyde, etc.)
- 520 ... Benzene ring or nitrogen containing coating material
- 521 ... Radiation as heat source (e.g., radiant energy, etc.)
- 522 .. Resistance or induction heat-initiated polymerization
- 523 . Ion plating or implantation
- 524 .. With simultaneous sputter etching of substrate
- 525 .. Organic material present in substrate, plating, or implanted layer
- 526 .. Nonuniform or patterned ion plating or ion implanting (e.g., mask, etc.)
- 527 .. Silicon present in substrate, plating, or implanted layer
- 529 .. Inorganic oxide containing plating or implanted material
- 530 .. Inorganic metal compound present in plating or implanted material (e.g., nitrides, carbides, borides, etc.)
- 528 .. Metal or metal alloy substrate
- 531 .. Metal or metal alloy plating or implanted material
- 532 . Pretreatment of substrate or post-treatment of coated substrate
- 533 .. Ionized gas utilized (e.g., electrically powered source, corona discharge, plasma, glow discharge, etc.)
- 534 ... Cleaning or removing part of substrate (e.g., etching with plasma, glow discharge, etc.)
- 535 ... Plasma (e.g., cold plasma, corona, glow discharge, etc.)
- 536 .... Organic substrate
- 537 ..... Metal containing coating
- 538 ..... Textile or fiber coated or impregnated
- 539 .... Oxygen containing atmosphere
- 540 .. Arc or electrical discharge
- 541 .. Drying
- 542 ... Infrared or radiant heating
- 543 .. Induction or dielectric heating

- 544 ... Organic coating containing material
- 545 .. Resistance heating
- 546 ... Metal or metal alloy containing coating
- 547 .. Magnetic field or force utilized
- 548 ... Magnetic recording medium or device formed
- 549 .... Running length substrate
- 550 ... Magnetizable powder, flakes, or particles utilized
- 551 .. High energy electromagnetic radiation or high energy particles utilized (e.g., gamma ray, X-ray, atomic particle, i.e., alpha ray, beta ray, high energy electron, etc.)
- 552 ... Nonuniform or patterned coating
- 553 .. Low energy electromagnetic radiation (e.g., microwave, radio wave, IR, UV, visible, actinic, laser, etc.)
- 554 ... Laser
- 555 .... Nonuniform or patterned coating
- 556 ..... Metal or metal alloy substrate
- 557 ... Thermal processes (e.g., radiant heat, infrared, etc.)
- 558 .... Ultraviolet light
- 559 .... Fusing, curing, or annealing (e.g., ceramics, etc.)
- 560 .. Sonic or ultrasonic (e.g., cleaning or removing material from substrate, etc.)
- 561 . Pretreatment of coating supply or source outside of primary deposition zone or off site
- 562 .. Electric discharge (e.g., corona, glow discharge, etc.)
- 563 ... Silicon containing coating material
- 564 ... Metal, metal alloy, or metal oxide containing coating material
- 565 .. Sonic or ultrasonic (e.g., vibratory energy, etc.)
- 566 .. Electron irradiation (e.g., e-beam evaporation, etc.)
- 567 ... Silicon or metal oxide coating (e.g., glass, etc.)
- 568 .. Silicon containing coating supply or source
- 569 . Plasma (e.g., corona, glow discharge, cold plasma, etc.)
- 570 .. Utilizing plasma with other nonionizing energy sources
- 571 ... With magnetic enhancement
- 572 ... Light as energy source
- 573 ... With heated substrate
- 574 ... Silicon containing coating
- 575 .. Generated by microwave (i.e., 1mm to 1m)
- 576 .. Metal, metal alloy, or metal oxide coating
- 577 .. Inorganic carbon containing coating material, not as steel (e.g., carbide, etc.)
- 578 .. Silicon containing coating material
- 579 ... Silicon oxides or nitrides
- 580 . Electrical discharge (e.g., arcs, sparks, etc.)
- 581 . Chemical deposition from liquid contiguous with substrate via electron beam or light (e.g., photochemical liquid deposition, etc.)
- 582 . Photoinitiated chemical vapor deposition (i.e., photo CVD)
- 583 .. Silicon containing coating
- 584 .. Metal, metal alloy, or metal oxide coating
- 585 . Chemical vapor deposition (e.g., electron beam or heating using IR, inductance, resistance, etc.)
- 586 .. Pyrolytic use of laser or focused light (e.g., IR, UV lasers to heat, etc.)
- 587 .. Resistance or induction heating
- 588 ... Silicon or semiconductor material containing coating
- 589 .... Silicon carbide
- 590 ... Boron, nitrogen, or inorganic carbon containing coating
- 591 . Induction or dielectric heating
- 592 . Resistance heating
- 593 .. Vapor deposition employing resistance heating of substrate or coating material
- 594 .. Immersion or partial immersion
- 595 . Electromagnetic or particulate radiation utilized (e.g., IR, UV, X-ray, gamma ray, actinic, microwave, radio wave, atomic particle; i.e., alpha ray, beta ray, electron, etc.)

<u>596</u>	.. Laser or electron beam (e.g., heat source, etc.)
<u>597</u>	... Metal or metal alloy containing coating material applied
<u>598</u>	. Magnetic field or force utilized
<u>599</u>	.. Magnetic recording medium or device formed
<u>600</u>	. Sonic or ultrasonic
<u>601</u>	.. Immersion bath utilized
<u>58</u>	<b>ELECTRICAL PRODUCT PRODUCED</b>
<u>59</u>	. Welding electrode
<u>60</u>	.. Post-treating with solid treating member
<u>61</u>	.. Metal coating or Group IIA metallic compound containing coating
<u>62</u>	. Superconductor
<u>63</u>	.. Nonuniform coating
<u>64</u>	. Fluorescent or phosphorescent base coating (e.g., cathode-ray tube, luminescent screen, etc.)
<u>65</u>	.. X-radiation properties
<u>66</u>	.. Electroluminescent lamp
<u>67</u>	.. Fluorescent lamp
<u>68</u>	.. Multicolor or mosaic (e.g., color T.V. tube, etc.)
<u>69</u>	.. Vapor deposition
<u>70</u>	... Nonmetallic coating formed by vapor deposition
<u>71</u>	.. Particles applied
<u>72</u>	.. Rotating the base
<u>73</u>	.. Settling out of liquid
<u>74</u>	. Photoelectric
<u>75</u>	.. Mosaic or nonuniform coating
<u>76</u>	.. Coating is selenium, tellurium, or compound thereof
<u>77</u>	. Electron emissive or suppressive (excluding electrode for arc)
<u>78</u>	.. Vapor deposition or spraying
<u>79</u>	. Condenser or capacitor
<u>80</u>	.. Electrolytic or barrier layer type
<u>81</u>	.. Vacuum or pressure utilized
<u>96</u>	. Integrated circuit, printed circuit, or circuit board
<u>97</u>	.. Coating hole walls
<u>98</u>	.. Immersion metal plating from solution (e.g., electroless plating, etc.)
<u>99</u>	.. Vapor deposition
<u>100</u>	. Piezoelectric properties
<u>101</u>	. Resistor for current control (excludes heating element)
<u>102</u>	.. Nonuniform coating
<u>103</u>	.. Applying superposed diverse coatings or coating a coated base
<u>104</u>	. Motor stator or core for winding
<u>105</u>	. Hollow article
<u>106</u>	.. Glass (e.g., light bulb, etc.)
<u>107</u>	... Vapor deposition
<u>108</u>	. Transparent base
<u>109</u>	.. Vapor deposition
<u>110</u>	.. Spraying
<u>111</u>	. Filament for lamp or tube
<u>112</u>	.. Carbon filament
<u>113</u>	. Carbon base
<u>114</u>	.. Brushes
<u>115</u>	. Fuel cell part
<u>116</u>	. Coil or winding
<u>117</u>	. Wire conductor
<u>118</u>	.. Applying superposed coatings or coating a coated base
<u>119</u>	.. Foam, cellular, or natural rubber coating
<u>120</u>	.. Heat utilized
<u>121</u>	. Cellulosic or fibrous base (e.g., wood, paper, etc.)
<u>122</u>	. Carbon coating
<u>123</u>	. Metal coating

<u>124</u>	.. Vapor deposition or utilizing vacuum
<u>125</u>	.. Silver, gold, platinum, or palladium
<u>126.1</u>	. Metallic compound coating
<u>126.2</u>	.. Glass or ceramic base or coating
<u>126.3</u>	.. Metal oxide, peroxide, or hydroxide coating
<u>126.4</u>	... Metal is Al
<u>126.5</u>	... Metal is Au, Ag, Pt, Pd, Ru, Rh, Os, Ir
<u>126.6</u>	... Metal is Ni, Fe, or Co
<b><u>127</u></b>	<b>MAGNETIC BASE OR COATING</b>
<u>128</u>	. Magnetic coating
<u>129</u>	.. With pretreatment of base
<u>130</u>	.. With post-treatment of coating or coating material
<u>131</u>	.. Applying superposed diverse coating or coating a coated base
<u>132</u>	.. Metal coating
<b><u>133</u></b>	<b>MOLD COATING</b>
<u>134</u>	. Sand mold
<u>135</u>	. Metal mold
<b><u>136</u></b>	<b>COATING PAVEMENT OR THE EARTH (E.G., ROADMAKING, ETC.)</b>
<u>137</u>	. Striping, marking, or increasing reflectivity
<u>138</u>	. Asphalt, bitumen, oil, or tar containing coating
<u>139</u>	.. Rolling
<b><u>140</u></b>	<b>RESTORING OR REPAIRING</b>
<u>141</u>	. Carbon paper or inked ribbon
<u>142</u>	. Metal article
<b><u>143</u></b>	<b>STENCIL BLANK MAKING</b>
<b><u>144</u></b>	<b>HECTROGRAPHIC OR COPYING SURFACE MAKING</b>
<b><u>145</u></b>	<b>LATENT IMAGE FORMED OR DEVELOPED</b>
<b><u>146</u></b>	<b>TRANSFER OR COPY SHEET MAKING</b>
<u>147</u>	. Decal or embossing foil type (i.e., continuous film transfers)
<u>148</u>	.. Heat sensitive
<u>149</u>	.. Fluid releasable
<u>150</u>	. Reactive components
<u>151</u>	.. Heterocyclic organic compound component
<u>152</u>	. Coating opposite sides or forming plural or nonuniform coats
<u>153</u>	. Carbon paper type
<b><u>154</u></b>	<b>REMOVABLE PROTECTIVE COATING APPLIED</b>
<u>155</u>	. Organic base
<u>156</u>	. Metal base
<b><u>157</u></b>	<b>FLUORESCENT OR PHOSPHORESCENT COATING</b>
<u>158</u>	. Optical brightening
<b><u>159</u></b>	<b>INCANDESCENT MANTLE PRODUCED</b>
<b><u>160</u></b>	<b>COATING HAS X-RAY, ULTRAVIOLET, OR INFRARED PROPERTIES</b>
<b><u>161</u></b>	<b>TRANSPARENCY OR TRANSLUCENCY INCREASED (E.G., MAKING WINDOW ENVELOPES, ETC.)</b>
<b><u>162</u></b>	<b>OPTICAL ELEMENT PRODUCED</b>
<u>163.1</u>	. Polarizer, windshield, optical fiber, projection screen, or retroreflector
<u>163.2</u>	.. Optical fiber, rod, filament, or waveguide
<u>163.3</u>	.. Projection screen
<u>163.4</u>	.. Retroreflector (e.g., light reflecting small spherical beads, etc.)
<u>164</u>	. Transparent base
<u>165</u>	.. Glass
<u>166</u>	... Vapor depositing
<u>167</u>	.... Silicon compound coating (e.g., quartz, etc.)
<u>168</u>	... Spraying
<u>169</u>	... Immersion
<b><u>170</u></b>	<b>DELUSTERING FABRIC OR YARN</b>
<b><u>171</u></b>	<b>WITH STRETCHING OR TENSIONING</b>
<u>172</u>	. Running lengths
<u>173</u>	.. Lateral stretching

<u>174</u>	.. Particles or fibers applied
<u>175</u>	.. Cord, thread, yarn, or wire
<u>176</u>	.. Textile fabric
<b><u>177</u></b>	<b>WITH WINDING, BALLING, ROLLING, OR COILING</b>
<u>178</u>	. Metal or glass base (e.g., wire, etc.)
<u>179</u>	. Paper or felt base
<b><u>180</u></b>	<b>SOLID PARTICLES OR FIBERS APPLIED</b>
<u>181</u>	. Interior or hollow article coating
<u>182</u>	.. Fluidized bed utilized
<u>183</u>	.. Rotating the base
<u>184</u>	. Nonuniform speed or nonrectilinear base motion
<u>185</u>	. Fluidized bed utilized
<u>186</u>	. Roofing produced
<u>187</u>	.. With cutting
<u>188</u>	.. Localized different areas produced
<u>189</u>	. Uniting particles to form continuous coating with nondiscernible particles
<u>190</u>	.. Metallic compound particles
<u>191</u>	.. Metal particles
<u>192</u>	... Aluminum, copper, or zinc particles
<u>193</u>	.. Vitriifiable particles
<u>194</u>	.. Roller utilized
<u>195</u>	.. Synthetic resin particles
<u>196</u>	. Plural direction application of coating materials or simultaneously applying particles and binder from different sources
<u>197</u>	. Localized different areas produced (e.g., printing, etc.)
<u>198</u>	.. Deforming the base or coating or removing part of the coating
<u>199</u>	.. Silicon compound, metal, or metallic compound containing particles applied
<u>200</u>	.. Flock or fibers applied
<u>201</u>	. Plural particulate materials applied
<u>202</u>	. Applying superposed diverse coatings or coating a coated base
<u>203</u>	.. Coating over the applied coating of particles
<u>204</u>	.. Silicon compound containing particles (e.g., sand, etc.)
<u>205</u>	.. Metal or metallic compound containing particles
<u>206</u>	.. Flock or fibers applied
<b><u>207.1</u></b>	<b>COATING REMAINS ADHESIVE OR IS INTENDED TO BE MADE ADHESIVE</b>
<u>208</u>	. Application to opposite sides of base
<u>208.2</u>	. Heat sensitive adhesive
<u>208.4</u>	. Pressure sensitive adhesive
<u>208.6</u>	.. Nonuniform coating (e.g., perforated, etc.)
<u>208.8</u>	.. Applying superposed diverse coatings or coating a coated base
<b><u>209</u></b>	<b>APPLICATION TO OPPOSITE SIDES OF SHEET, WEB, OR STRIP (EXCLUDING PROCESSES WHERE ALL COATING IS BY IMMERSION)</b>
<u>210</u>	. Nonuniform coating
<u>211</u>	. Roller applicator utilized
<b><u>212</u></b>	<b>PARTICLES, FLAKES, OR GRANULES COATED OR ENCAPSULATED</b>
<u>213</u>	. Fluidized bed utilized
<u>213.3</u>	. Solid encapsulation process utilizing an emulsion or dispersion to form a solid-walled microcapsule (includes liposome)
<u>213.31</u>	.. With post-treatment of encapsulant or encapsulating material (e.g., further coating, hardening, etc.)
<u>213.32</u>	... Hardening
<u>213.33</u>	.... Using crosslinking agent
<u>213.34</u>	.. Solid-walled microcapsule formed by in situ polymerization
<u>213.35</u>	.. Solid-walled microcapsule formed from gelatin or derivative thereof

- 213.36 .. Solid-walled microcapsule formed from preformed synthetic polymer
- 214 . Applying superposed diverse coatings or coating a coated base
- 215 . Inorganic base
- 216 .. Metal base
- 217 .. Metal coating
- 218 .. Pigment containing coating
- 219 ... Silicon compound containing coating
- 220 .. Organic coating
- 221 ... Resin, rubber, or hardenable oil containing coating
- 222 . Resin base
- 223 **FLAME CONTACT**
- 224 . After coating
- 225 . Metal coating
- 226 **HEAT DECOMPOSITION OF APPLIED COATING OR BASE MATERIAL**
- 227 . Base material decomposed or carbonized
- 228 . Coating decomposed to form carbide or coating carbonized
- 229 . Coating decomposed to form metal
- 230 **INTERIOR OF HOLLOW ARTICLE COATING**
- 231 . Rotating the article
- 232 .. Removing excess coating material
- 233 .. Spraying
- 234 .. Metal base
- 235 . Removing excess coating material
- 236 . Spraying
- 237 . Coating by vapor, gas, mist, or smoke
- 238 . Vacuum or pressure utilized
- 239 . Metal base
- 240 **CENTRIFUGAL FORCE UTILIZED**
- 241 . Metal coating
- 242 **RUMBLING OR TUMBLING**
- 243 **FORAMINOUS PRODUCT PRODUCED**
- 244 . Filter, sponge, or foam
- 245 . Microporous coating (e.g., vapor permeable, etc.)
- 246 .. Coagulating or jelling the coating
- 247 . Metal base
- 248.1 **COATING BY VAPOR, GAS, OR SMOKE**
- 249.1 . Carbon or carbide coating
- 249.2 .. Chemical vapor infiltration (i.e., CVI) of porous base (e.g., fiber, fibrous web, etc.)
- 249.3 .. Fiber or fibrous web or sheet base (e.g., strand, filament, fabric, cloth, etc.)
- 249.4 ... Inorganic carbon base (e.g., graphite, etc.)
- 249.5 .. Boron and carbon containing coating (e.g., boron carbide, etc.)
- 249.6 .. Graphite coating
- 249.7 .. Diamond-like carbon coating (i.e., DLC)
- 249.8 .. Diamond coating
- 249.9 ... Patterned or non-uniform coating
- 249.11 ... Hot filament utilized
- 249.12 ... Diamond seed crystals utilized
- 249.13 ... Tungsten containing base
- 249.14 ... Superposed coatings (i.e., layered)
- 249.15 .. Silicon and carbon containing coating (e.g., silicon carbide, etc.)
- 249.16 ... Inorganic carbon base (e.g., graphite, etc.)



- 249.17 .. Metal carbide containing coating
- 249.18 ... Chromium (Cr), molybdenum (Mo), or tungsten (W) metal carbide containing coating
- 249.19 ... Titanium (Ti), zirconium (Zr), or hafnium (Hf) metal carbide containing coating
- 250 . Metal coating
- 251 .. Moving the base
- 252 .. By decomposing metallic compound (e.g., pack process, etc.)
- 253 ... Halogen containing compound
- 254 . Wood base
- 255.11 . Base includes an inorganic compound containing silicon or metal (e.g., glass, ceramic, brick, etc.)
- 255.12 .. Chemical vapor infiltration (i.e., CVI) of porous base (e.g., fiber, fibrous web etc.)
- 255.13 .. Glaze coating produced
- 255.14 .. Organic compound containing coating
- 255.15 .. Plural coatings applied utilizing vapor, gas, or smoke
- 255.18 .. Silicon containing coating
- 255.17 ... Halogen containing coating, reactant, or precursor
- 255.19 .. Metal oxide containing coating
- 255.21 .. Base includes inorganic metal containing compound
- 255.22 ... Iron compound containing base (e.g., ferric oxide, etc.)
- 255.23 . Mixture of vapors or gases (e.g., deposition gas and inert gas, inert gas and reactive gas, two or more reactive gases, etc.) utilized
- 255.24 .. Fiber or fibrous web or sheet based (e.g., strand, filament, fabric, cloth, etc.)
- 255.25 .. Mixture contains liquid or solid particulate suspension
- 255.26 .. Coating formed by reaction of vaporous or gaseous mixture with a base (i.e., reactive coating of non-metal base)
- 255.27 ... Silicon containing coating
- 255.28 .. Coating formed from vaporous or gaseous phase reaction mixture (e.g., chemical vapor deposition, CVD, etc.)
- 255.29 ... Inorganic oxygen, sulfur, selenium, or tellurium (i.e., chalcogen) containing coating (e.g., phosphosilicate, silicon oxynitride, etc.)
- 255.31 .... Metal and chalcogen containing coating (e.g., metal oxide, metal sulfide, metal telluride, etc.)
- 255.32 ..... Plural metal containing coating (e.g., indium oxide/tin oxide, titanium oxide/aluminum oxide, etc.)
- 255.33 ..... Zinc (Zn), cadmium (Cd), or mercury (Hg), containing
- 255.34 ..... Gallium (Ga), aluminum (Al), or indium (In) containing
- 255.35 ..... Germanium (Ge), tin (Sn), or lead (Pb) containing
- 255.36 ..... Titanium (Ti) or zirconium (Zr) containing
- 255.37 .... Silicon dioxide coating

<u>255.38</u>	... Phosphorus or boron containing coating (e.g., aluminum boride, boron phosphide etc.)
<u>255.39</u>	... Halogen or halogen compound containing reactant
<u>255.391</u>	.... Titanium compound containing coating (e.g., titanium carbonitride, titanium nitride, etc.)
<u>255.392</u>	.... Tungsten compound containing coating (e.g., tungsten silicide, etc.)
<u>255.393</u>	.... Silicon containing coating
<u>255.394</u>	... Nitrogen containing coating (e.g., metal nitride, etc.)
<u>255.395</u>	.. Inorganic coating
<u>255.4</u>	. Base supplied constituent
<u>255.5</u>	. Moving the base
<u>255.6</u>	. Organic coating applied by vapor, gas, or smoke
<u>255.7</u>	. Plural coatings applied by vapor, gas, or smoke
<b><u>256</u></b>	<b>NONUNIFORM COATING</b>
<u>257</u>	. Wrinkled or crackled coating
<u>258</u>	. Applying superposed diverse coatings or coating a coated base
<u>259</u>	.. Including a masking coating
<u>260</u>	.. Handheld brush or absorbent applicator utilized
<u>261</u>	.. Final coating nonuniform
<u>262</u>	... Variegated surface produced (e.g., mottled, stippled, wood grained, etc.)
<u>263</u>	.... Marbleized
<u>264</u>	... Deforming the base or coating or removing a portion of the coating
<u>265</u>	... Plural nonuniform coatings
<u>266</u>	.... Glass or ceramic base
<u>267</u>	.. Variegated surface produced (e.g., mottled, stippled, wood grained, etc.)
<u>268</u>	... Marbleized
<u>269</u>	.. Glass or ceramic base
<u>270</u>	.. Deforming the base or coating or removing a portion of the coating
<u>271</u>	. Deforming the base or coating or removing a portion of the coating
<u>272</u>	.. Mask or stencil utilized
<u>273</u>	.. Fluid treating the coating (e.g., vapor treating, etc.)
<u>274</u>	.. Variegated surface produced (e.g., stippled, marbleized, mottled, wood grained, etc.)
<u>275</u>	.. Deforming the base
<u>276</u>	... Simultaneously deforming the coating
<u>277</u>	.. Solid treating member contacts coating
<u>278</u>	... Roller treating member
<u>279</u>	. Vitreous coating
<u>280</u>	. Variegated surface produced (e.g., mottled, wood grained, etc.)
<u>281</u>	.. Marbleized
<u>282</u>	. Mask or stencil utilized
<u>283</u>	. Crystalization or precipitation coating
<u>284</u>	. Edge or border coating
<u>285</u>	.. Paper or textile base
<u>286</u>	. Striping (i.e., forming stripes)
<u>287</u>	. Metal, glass, or ceramic base
<u>288</u>	. Paper or textile base
<b><u>289</u></b>	<b>WITH CUTTING, HOLDING, SEVERING, OR ABRADING THE BASE</b>
<u>290</u>	. Prior to coating
<u>291</u>	.. Wood base (e.g., injecting, etc.)
<u>292</u>	.. Inorganic base
<u>293</u>	. Rectilinear cutting to length
<b><u>294</u></b>	<b>VACUUM UTILIZED PRIOR TO OR DURING COATING</b>
<u>295</u>	. Metal base

<u>296</u>	. Organic base
<u>297</u>	.. Wood base
<u>298</u>	... Creosote, wax, oil, asphalt, or bitumen coating
<b><u>299</u></b>	<b>WITH PRETREATMENT OF THE BASE</b>
<u>300</u>	. Shielding or spacing
<u>301</u>	. Preapplied reactant or reaction promoter or hardener (e.g., catalyst, etc.)
<u>302</u>	.. Resin, rubber, or hardenable oil containing coating
<u>303</u>	... Cellulosic base
<u>304</u>	.. Metal coating (e.g., electroless deposition, etc.)
<u>305</u>	... Nickel, copper, cobalt, or chromium coating
<u>306</u>	.... Organic base
<u>307</u>	. Etching, swelling, or dissolving out part of the base
<u>308</u>	.. Cellulosic base
<u>309</u>	.. Inorganic base
<u>310</u>	. Fluxing
<u>311</u>	.. Supernatant flux (floating)
<u>312</u>	... Lead or tin coating
<u>313</u>	.. Lead or tin coating
<u>314</u>	. Heating or drying pretreatment
<u>315</u>	.. Steam utilized
<u>316</u>	.. Organic base
<u>317</u>	... Wood base
<u>318</u>	.. Metal base
<u>319</u>	... Metal coating
<u>320</u>	.... Aluminum coating
<u>321</u>	... Zinc or spelter coating (e.g., galvanizing, etc.)
<u>322</u>	. Organic base
<u>323</u>	.. Natural protein containing base (e.g., silk, wool, leather, etc.)
<u>324</u>	.. Cellulosic base
<u>325</u>	... Wood base
<u>326</u>	... Paper base
<u>327</u>	. Metal base
<u>328</u>	.. Metal coating
<u>329</u>	... Molten metal bath utilized
<u>330</u>	.. Vitreous coating
<b><u>331</u></b>	<b>WITH POST-TREATMENT OF COATING OR COATING MATERIAL</b>
<u>332</u>	. Deodorizing
<u>333</u>	. Plural film forming coatings wherein one coating contains a chemical treating agent for the other
<u>334</u>	. Oil or wax treatment of coating
<u>335</u>	. Solvent vapor treatment of coating
<u>336</u>	. Swelling agent or solvent applied to treat coating
<u>337</u>	. Chemical agent applied to treat coating
<u>338</u>	.. Proteinaceous coating
<u>339</u>	.. Cellulosic coating
<u>340</u>	.. Resin, resin precursor, rubber, or hardenable oil containing coating
<u>341</u>	... Inorganic treating agent
<u>342</u>	... Textile or cellulosic base
<u>343</u>	.. Inorganic coating
<u>344</u>	... Silicon compound containing coating
<u>345</u>	. Coating material recirculation or regeneration
<u>346</u>	. Movement of work treats coating (e.g., vibrating, tilting, etc.)
<u>347</u>	.. Metal coating
<u>348</u>	. Gas jet or blast mechanically treats coating
<u>349</u>	.. Metal coating
<u>350</u>	. Vacuum or reduced pressure utilized
<u>351</u>	.. Wood base
<u>352</u>	. Liquid extraction of coating constituent or cleaning coating
<u>353</u>	.. With water

<u>354</u>	... Drying subsequent to washing
<u>355</u>	. Solid treating member or material contacts coating
<u>356</u>	.. Die, blade, or sharp-edged tool
<u>357</u>	... Metal coating
<u>358</u>	... Organic coating
<u>359</u>	.. Roller, drum, or cylinder
<u>360</u>	... Metal coating
<u>361</u>	... Paper base (e.g., calendering, etc.)
<u>362</u>	.... Cast coating
<u>363</u>	.... Wax or oil containing coating
<u>364</u>	.... Casein or starch containing coating
<u>365</u>	... Treating between rollers (e.g., calendering, etc.)
<u>366</u>	.... With heating (e.g., heated roller, etc.)
<u>367</u>	.. Metal coating
<u>368</u>	.. Brushing
<u>369</u>	.. Pressure treatment of coating (e.g., squeezing, etc.)
<u>370</u>	... With heating (e.g., hot ironing, etc.)
<u>371</u>	.. Organic base
<u>372.2</u>	. Heating or drying (e.g., polymerizing, vulcanizing, curing, etc.)
<u>373</u>	.. Cells, foam, or bubbles formed
<u>374.1</u>	.. And cooling
<u>374.2</u>	... Heating after cooling
<u>374.3</u>	.... Without intervening coating step
<u>374.4</u>	... Fused or molten coating cooled
<u>374.5</u>	.... Liquid or solid cooling medium
<u>374.6</u>	.... Vacuum, vapor, or gas other than air utilized
<u>374.7</u>	.... Vitreous or glazed coating
<u>375</u>	.. Fusion or softening of coating
<u>376.1</u>	... Inorganic coating
<u>376.2</u>	.... Metal oxide- or silicon-containing coating (e.g., glazed, vitreous enamel, etc.)
<u>376.3</u>	..... Metal-containing coating (e.g., cermet, etc.)
<u>376.4</u>	..... Metal base
<u>376.5</u>	..... Ferrous base
<u>376.6</u>	.... Metal-containing coating
<u>376.7</u>	..... Coating consists of metal
<u>376.8</u>	..... Metal base
<u>377</u>	.. Modified condition of atmosphere (e.g., steam, air movement, etc.)
<u>378</u>	... Movement of atmosphere
<u>379</u>	.. Plural heating or drying steps
<u>380</u>	... Metal or metallic compound containing coating
<u>381</u>	... Textile or cellulosic base
<u>382</u>	.... Paper or natural cellulose base
<u>383.1</u>	.. Metal coating
<u>383.3</u>	... Inorganic base
<u>383.5</u>	.... Fused oxide-containing base (e.g., ceramic, glass, etc.)
<u>383.7</u>	.... Metal base
<u>384</u>	.. Organic coating
<u>385.5</u>	... Resin, resin precursor, rubber, or hardenable oil-containing coating
<u>386</u>	.... Epoxy or polyepoxide containing coating
<u>387</u>	.... Silicon compound containing coating
<u>388.1</u>	.... Metal base
<u>388.2</u>	..... Cross-linked or infusible coating
<u>388.3</u>	..... Aldehyde-containing precursor
<u>388.4</u>	..... Water-containing coating (i.e., aqueous dispersion, emulsion, or solution)
<u>388.5</u>	..... Nonaqueous dispersion
<u>389</u>	.... Proteinaceous base (e.g., wool, leather, etc.)
<u>389.7</u>	.... Glass base
<u>389.8</u>	..... Fiberglass base
<u>389.9</u>	.... Textile or cellulose base

<u>391</u>	..... Paper base
<u>392</u>	..... Natural cellulose base
<u>393</u>	..... Wood base
<u>393.1</u>	..... Antistatic properties increased
<u>393.2</u>	..... Wrinkle resistance of crease holding properties increased
<u>393.3</u>	..... Flame resistance increased
<u>393.4</u>	..... Antisoiling or water repellency increased
<u>393.5</u>	.... Resin, rubber, or elastomer base
<u>393.6</u>	.... Asbestos, ceramic, concrete, or masonry base
<u>394</u>	... Textile or cellulosic base
<u>395</u>	... Paper base
<u>396</u>	... Natural cellulose base
<u>397</u>	..... Wood base
<u>397.7</u>	.. Inorganic silicon-containing coating
<u>397.8</u>	... Alkali silicate
<u>398.1</u>	. Cooling
<u>398.2</u>	.. Utilizing solid member contacting base or coating (e.g., cooling roller, etc.)
<u>398.3</u>	.. Liquid utilized (e.g., quenching, spraying, etc.)
<u>398.4</u>	.. Vacuum, vapor, or gas other than air utilized
<u>398.5</u>	.. Movement of atmosphere
<b><u>399</u></b>	<b>BASE SUPPLIED CONSTITUENT</b>
<u>400</u>	. Resin or rubber base
<b><u>401</u></b>	<b>COMBINED</b>
<b><u>402</u></b>	<b>APPLYING SUPERPOSED DIVERSE COATING OR COATING A COATED BASE</b>
<u>403</u>	. Settable inorganic coating (e.g., cement, etc.)
<u>404</u>	. Metal coating
<u>405</u>	.. Metal base
<u>406</u>	... Zinc coating
<u>407.1</u>	. Synthetic resin coating
<u>407.2</u>	.. Glass base
<u>407.3</u>	... Fiberglass base
<u>408</u>	.. Wood base
<u>409</u>	.. Metal base
<u>410</u>	... Epoxy or polyepoxide containing coating
<u>411</u>	.. Paper base
<u>412</u>	.. Textile or leather base
<u>412.1</u>	.. Nonfibrous organic base
<u>412.2</u>	... Cellulose derivative base
<u>412.3</u>	... Polyolefin base
<u>412.4</u>	... Halogen-containing resin base
<u>412.5</u>	... Polyester or alkyd resin base
<u>413</u>	. Natural rubber or derivative containing coating
<u>414</u>	. Protein or derivative containing coating (e.g., casein, glue, gelatin, etc.)
<u>415</u>	. Cellulosic coating
<u>416</u>	. Wax containing coating
<u>417</u>	. Natural resin, oil, or fat containing
<u>418</u>	.. Metallic compound-containing coating
<u>419.1</u>	. Metallic compound-containing coating
<u>419.2</u>	.. Oxide-containing coating
<u>419.3</u>	... Superposed diverse oxide coatings
<u>419.4</u>	.... Vitreous coating
<u>419.5</u>	... Organic coating
<u>419.6</u>	... Vitreous coating
<u>419.7</u>	.. Boride, carbide, nitride, phosphide, silicide, or sulfide-containing coating
<u>419.8</u>	.. Organometallic or metal salt of organic compound-containing coating
<b><u>420</u></b>	<b>FALLING CURTAIN OF COATING MATERIAL UTILIZED (I.E., CURTAIN COATING)</b>
<b><u>421</u></b>	<b>SPRAYING</b>
<u>422</u>	. Heated coating material

- 424 . Moving the base
- 425 .. Rotating or inverting
- 426 . Ingredients supplied separately
- 427 . Inorganic coating material
- 428 ROLLER APPLICATOR UTILIZED (E.G., PADDING, ETC.)**
- 429 BRUSH OR ABSORBENT APPLICATOR UTILIZED**
- 430.1 IMMERSION OR PARTIAL IMMERSION**
- 
- 431 . Molten metal or fused salt bath
- 432 .. Inert gas or nonoxidizing atmosphere utilized
- 433 .. Lead, zinc, or tin coating (e.g., galvanizing, etc.)
- 434.2 . Running lengths
- 434.3 .. Coating applied at surface of bath only
- 434.4 .. Base treated by solid member in bath (e.g., scraped, squeezed, etc.)
- 434.5 .. Coating material moved (e.g., agitated, circulated, etc.)
- 434.6 .. Cord, thread, yarn, wire, or rod
- 434.7 ... Extending through bath-containing wall
- 435 . Metal base
- 436 .. Metal coating
- 437 ... Chemical compound reducing agent utilized (i.e., electroless deposition)
- 438 .... Nickel coating
- 439 . Cellulosic base
- 440 .. Wood base
- 441 ... Creosote, wax, oil, asphalt, or bitumen containing coating
- 442 .. Wax, oil, asphalt, or bitumen containing coating
- 443 . Wax, oil, asphalt, or bitumen containing coating
- 443.1 . Chemical compound reducing agent utilized (i.e., electroless deposition)
- 443.2 . Inorganic base
- 444 PRETREATMENT, PER SE, OR POST-TREATMENT, PER SE (WITHOUT CLAIMED COATING)**
- 445 MISCELLANEOUS**

## CROSS-REFERENCE ART COLLECTIONS

- 900 **CHEMICAL VAPOR INFILTRATION (I.E., CVI)**
- 901 **LIQUID SOURCE CHEMICAL DEPOSITION (I.E., LSCVD) OR AEROSOL CHEMICAL VAPOR DEPOSITION (I.E., ACVD)**
- 903 **FULLERENE TYPE BASE OR COATING**
- 902 **DIAMOND-LIKE CARBON COATING (I.E., DLC)**
- 904 . Utilizing low energy electromagnetic radiation (e.g., microwave, radio wave, IR, UV, visible, actinic laser, etc.)
- 905 . Utilizing ion plating or ion implantation
- 906 . Utilizing plasma (e.g., corona, glow discharge, cold plasma, etc.)

## FOREIGN ART COLLECTIONS

**FOR000 CLASS-RELATED FOREIGN DOCUMENTS**

Any foreign patents or non-patent literature from subclasses that have been reclassified have been transferred directly to FOR Collection listed below. These collections contain ONLY foreign patents or nonpatent literature. The parenthetical references in the Collection titles refer to the abolished subclasses from which these Collections were derived.

**FOR100 COATING BY VAPOR, GAS, OR SMOKE**

- FOR100 . Carbon or carbide coating (427/249)

- FOR101 . Base includes inorganic silicon or metal containing compound (e.g., glass, ceramic, brick, etc.) (427/255)

FOR102 . Mixture of vapors or gases utilized (427/255.1)

FOR103 .. The resultant coating is a mixture or a compound formed from the mixture utilized (427/255.2)

FOR104 ... The mixture utilized contains oxygen (427/255.3)

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